



Forest Health Protection Pacific Southwest Region



Date: June 27, 2016

File Code: 3400

To: Laura Allen, District Ranger, Goosenest Ranger District

Subject: Biological evaluation following Lucky Springs site visit

At the request of Roger Siemers and Mike Reed, Klamath Silviculture, a site visit was made to the Lucky Springs and Bogus Plantations project area May 23, 2016. The Lucky Springs and Bogus Plantations were first visited June 4, 2012. It is expected that a proposal to treat approximately 800 acres of approximately 40 year old plantations will be added to the FY2018 Forest Capability Report. The objectives were to assess the current stand conditions for insect and disease activity and discuss suitability for WBBF funding. Roger Siemers, Mike Reed, Travis Coughlin, Eric Baxter, Matt Avery, Cassandra Gerster (Klamath NF), Pete Angwin and Cynthia Snyder (FHP) were present.

Background

The Lucky Springs Plantations are approximately 1,000 acres of converted brush fields approximately 10 miles northwest of Meiss Lake (T47N R5E sect. 4, 5, 8, 13, and 17), or 13.8 miles northwest of the town of Macdoel (Figure 1). These brush fields were planted to ponderosa pine (*Pinus ponderosa*) and Douglas-fir (*Pseudotsuga menziesii*) in the mid-1970s. Windrows are still visible in many units and white fir (*Abies albicaulis*) is filling in the understory. These plantations lie between 5,200-5,800 feet elevation within the Lucky Springs Watershed. The land use is designated as Matrix.

The Bogus Plantations, approximately 15 miles west-northwest of Macdoel, include 174 acres with a mix of approximately 60 year old ponderosa and Jeffrey pine (*Pinus jeffreyi*) planted after the Bogus Burn of 1955 (Figure 2). Many of these stands were thinned in the late 1990s-early 2000s. The Bogus stands that were visited are in the Iron Creek watershed and may be part of the Goosenest LSR. It is considered high site quality with very good growth.

Observations

The Lucky Springs plantations are either pine or Douglas-fir dominated mixed conifer (with white fir ingrowth). The pine stands of the Lucky Springs Plantations average SDI was 200-300 with an average basal area of 260 and average diameter of about 10 inches DBH and crown ratio of 25-30%. Growth has slowed considerably in the past 20 years (Figure 3). Western pine beetle-caused mortality of ponderosa pine was found in pockets

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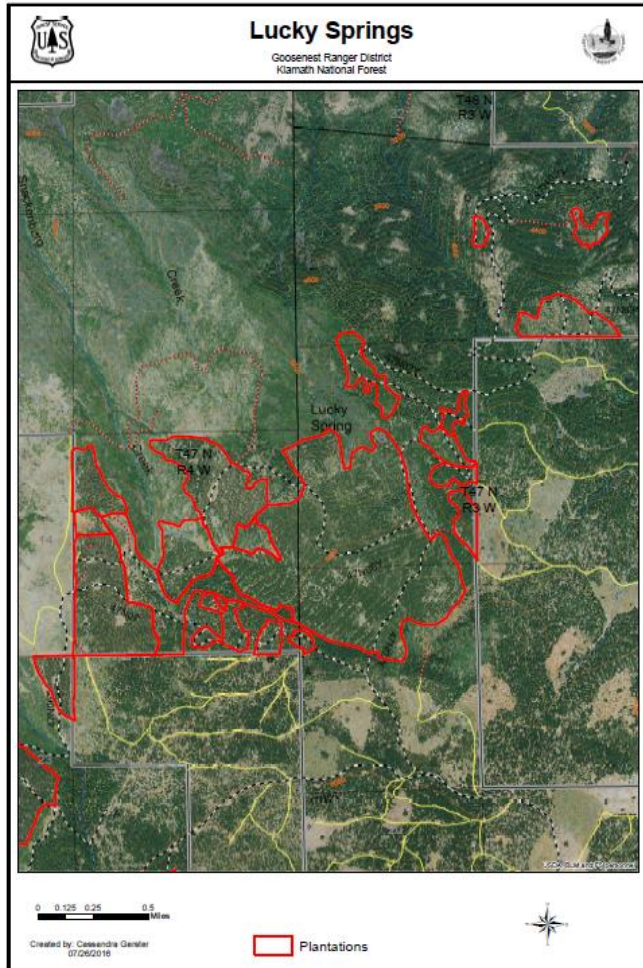


Figure 1. Aerial view of Lucky Springs plantation units (outlined in red).

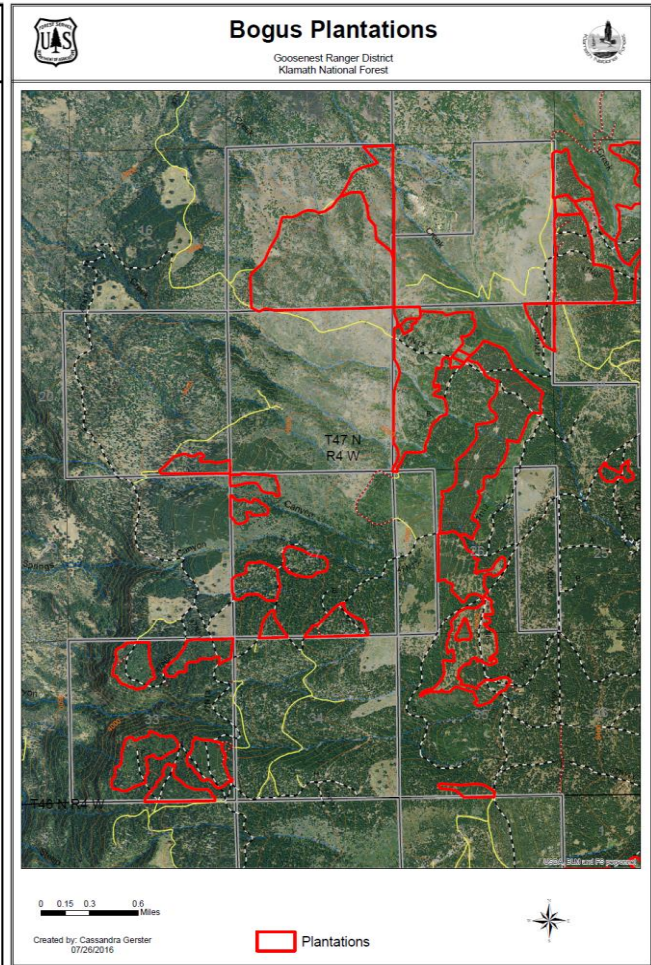


Figure 2. Aerial view of Bogus Plantations (outlined in red).

of 2-5 trees scattered throughout the project area. This is expected with the high SDIs (Figure 4). The 2013-15 ADS data show polygons between 30 and 140 acres with some level of pine mortality near the plantations labeled as being caused by western pine beetle. Western pine beetle has been an issue in these stands and populations have continued to persist and possibly grow in these past several years of drought conditions.

Mixed conifer stands among the pine plantations include stands of white and red fir with a mix of Douglas-fir where basal areas exceed 400 square feet per acre, SDI in excess of 500 (Figure 5). Douglas-fir had dwarf mistletoe throughout the crowns and evidence of fir engraver beetle was found in the white fir. Fir engraver beetle, often associated with drought, has been showing on ADS annually in greater numbers of acres in this area since 2013. Flatheaded wood borers were taking out the severely weakened trees of both species singly and in groups of 2-3 trees.

Roger suggested thinning to about a 40 foot spacing between best available residuals of 12-16 inch diameters in mixed conifer stands to provide the best long-term growth and maintain species diversity in the mixed conifer stands. The pine stands were suggested to

be thinned to a basal area of 80-100 square feet per acre leaving the best available stock and keeping a mix of Douglas-fir where available.



Figure 3. Very dense stand conditions at Lucky springs ponderosa pine plantation.



Figure 4. Western pine beetle-caused tree mortality evidenced by woodpecker flaking bark off to get to larvae.



Figure 5. Very dense stand conditions in Lucky Springs mixed conifer plantation.

The Bogus stand we visited was still showing good growth at a basal area of 160 square feet per acre (Figure 6), but we were told that many other stands were much denser. The stand we looked at would not qualify as high risk but 2013-14 ADS data show polygons of bark beetle-caused tree mortality near the plantations. It was suggested that a



Figure 6. Recently thinned plantation unit in Bogus Plantations.

commercial sale of ponderosa and Jeffrey pine in the Bogus Plantations may be used to increase interest in the less commercial Lucky Springs stands.

Discussion

The area is at risk of continued western pine beetle-caused mortality in ponderosa pine due primarily to overstocking and drought. As with most bark beetles, the most economical and efficient means of management is to maintain trees and stands in a healthy condition. Stocking reduction and creation of diverse stand conditions reduce overall susceptibility to western pine beetle. Thinning was discussed and it was suggested that treatment should bring the SDI down to a level where it would remain below 200 for a minimum of 20 years to meet the Region requirement of no less than 20 year re-entry for thinning. Patch thins would benefit the stands by providing both age class and species diversity by retaining true fir and other species.

If you have any questions regarding this report and/or need additional information, please contact Cynthia Snyder at 530-226-2437 or Pete Angwin at 530-226-2436.

/s/ Cynthia Snyder

CC: Roger Siemers, Mike Reed, Travis Coughlin, Eric Baxter, Matt Avery, Cassandra Gerster, Chris Losi, Sheri Smith, Phil Cannon, Chris Fischer, Sherry Hazlehurst, and Pete Angwin